Amendments to the Claims:

Please cancel claims 1 to 8 as presented in the underlying International Application No. PCT/EP2003/009919.

Please add new claims 9 to 16 as indicated in the listing of claims below.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 to 8 (cancelled).

Claim 9 (new): A method for the mounting of an add-on part on a workpiece, the add-on part being mounted on the workpiece in a precisely positioned manner in relation to a reference region, a mounting tool being guided by a robot and including a fixing device for picking up the add-on part, and a sensor system being connected fixedly to the mounting tool and having at least one sensor, the method comprising:

during a positioning phase, first moving the mounting tool with the add-on part held in the fixing device from a proximity position independent of a position of the workpiece in a working area of the robot into a mounting position, the add-on part held in the mounting tool being aligned in the mounting position in a precisely positioned manner in relation to the reference region of the workpiece,

the add-on part then being connected in the mounting position of the mounting tool to the workpiece, and

the positioning phase including, in order to approach the mounting position, running through an iterative control operation including:

producing an actual measured value of the at least one sensor;

comparing the actual measured value with a desired measured value produced within the context of a setting-up phase,

calculating a movement vector of the mounting tool from a difference between the

actual measured value and the desired measured value using a Jacobi matrix calculated during the setting-up phase, and

displacing the mounting tool using the movement vector.

Claim 10 (new): The method as recited in claim 9 wherein the iterative control operation is terminated if either the difference between the desired measured value and the actual measured value lies below a predetermined threshold value, or a reduction in the difference during consecutive iteration steps lies below another predetermined threshold value.

Claim 11 (new): The method as recited in claim 9 wherein a TCP/IP interface is used for communication between a control device of the robot and an evaluation unit of the sensor system.

Claim 12 (new): The method as recited in claim 9 wherein the workpiece is a vehicle body.

Claim 13 (new): The method as recited in claim 12 wherein the add-on part is a front module mounted into a front opening of the vehicle body.

Claim 14 (new): The method as recited in claim 12 wherein the add-on part is a roof module mounted into a roof opening of the vehicle body.

Claim 15 (new): A mounting system for the mounting of an add-on part on a workpiece, the mounting system comprising:

a mounting tool guided with aid of a robot;

a sensor system connected fixedly to the mounting tool and including at least one sensor;

a control device for controlling the robot and the mounting tool; and

an evaluation unit for evaluating measured values of the sensor system, the at least one of the sensors being a metrically uncalibrated sensor.

Claim 16 (new): The mounting system as recited in claim 15 wherein the at least one sensor is an optical gap-measuring sensor.

Claim 17 (new): The mounting system as recited in claim 15 wherein the at least one sensor is a contactlessly and two-dimensionally measuring sensor using luminous radiation in the UV range to record a surface area.

Claim 18 (new): The mounting system as recited in claim 15 wherein the mounting system is a vehicle body add-on part mounting system.